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Note from the Publisher

Dear fellow Birdwatchers,

Evolutionary causes and consequences of polygyny, bigamy and cuckoldry among birds.

In this issue we have published Raju Kasambe and Anil Pimplapure's article on forced mating in Jungle Babblers. Incidentally, studies have indicated that even though monogamous mating system is apparently the rule among old world flycatchers *(Muscicapids)*, some are reportedly polygamous. In Germany, a three year study on the mating behaviour of Spotted Flycatcher was carried out, and three cases of bigamy was observed; one simultaneous and the other two successive. In at least one case, the male helped to feed both broods, while one marked female participated in all three cases, indicating site-fidelity in three successive years; otherwise bigamous adults bred monogamously in the other years of the study. In yet another recorded instance of polygamy, a mate simultaneously attended to two females in nests about 21 m apart. In recent years, molecular techniques have revealed a quite unexpected amount of multiple mating, even in species such as the Starling, which had previously been described as monogamous and in which both parents care for the young.

In a nest box study of Collared Flycatchers in Germany, only 8% of the males, mostly one year old birds, annexed one nest-site and had one mate, whereas the older mates, especially early arrivals, typically annexed several sites in succession and 6% of them paired with more than one female. Polygyny, typically bigamy, is associated with poly-territoriality; males selecting a primary mate and, when she is lying, starting to display at other empty holes in the territory, thus often attracting a second mate, and some times even a third. The polygamous males direct most of their attention towards feeding the primary brood, whereas the second and third females receive little or no help and, consequently, rear fewer and poorer quality young than do primary females and those with monogamous males. Birkhead and Moller have inferred that females in many species actively solicit copulations from males, so it is not that more powerful males are coercing females into mating with them.

Apart from polygyny, cuckoldry also occurs in some birds such as Collared Flycatchers, when a male copulates with another female, often his nearest neighbor's mate, and his offspring are then reared by the other male. A similar behavior has been reported among Cattle Egrets, by Raju Kasambe, in this issue. Though the advantage of polygyny to the male obviously lies in higher overall reproductive success and fitness, this is achieved at a considerable cost to the secondary female, which experiences a lower success than do primary females. On the other hand, bigamous males cannot guard their primary females as much as the monogamous males, and they therefore run the risk of being cuckolded and having to share fatherhood of the brood. To a lesser extent, even monogamous males run this risk, as they are frequently absent from the nest when chasing intruding males from the territory, and observations suggest that there is considerable risk of cuckoldry, if the male travels more that 10 m from the female. Considering all broods, it appears that the attendant male fathers only about 75% of the young, and, even though polygamous males are more at risk, they produce more young by having a secondary female. Bigamy among birds is therefore a selective advantage, as surmised by some experts.

Thanking You,
Yours in Bird Conservation,

S. Sridhar, *Publisher, NLBW*

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Sighting of Black Stork (*Ciconia nigra*) in Kalesar National Park, Yamunanagar Dt., Haryana, India

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Under the Approved Plan of Research Work, Zoological Survey of India, Dehra Dun, is nducting a series of ‘General Faunistic Surveys’ in Kalesar National Park in Yamunanagar district of Haryana State since April 2006. In this connection, the authors are also participating frequently in field surveys of the Park. The park is assigned IBA site code IN-HR-03 under the criteria A1 (Globally Threatened species) & A3 (Biome-Restricted Assemblages) by Islam and Rahmani (2004).

Recently, on 24th February 2008 at around 1400 hrs, the authors while carrying out faunistic survey work along the river Yamuna flowing besides Kalesar sighted a flock of seven large black birds standing near water.

At a closer look, with the aid of a 10x50 prismatic field binocular, various characteristics such as black upperparts with contrasting white underparts along with the scarlet bill and legs were observed. It did not take much time to identify these seven black large wading birds as the Black Stork (*Ciconia nigra*). The flock was further approached for a still closer look and observed the varying sheen on black plumage: purple, green and bronze on upperparts; brilliant green on neck; and mixed green and purple on upper breast, except the remaining white underparts (lower breast, belly, flanks and under tail-coverts). A couple of photographs were also taken with the help of a Nikon camera. The altitude (c. 325m) and the co-ordinates (30Ú 21’ N, 77 Ú35’ E) of the locality were recorded with the help of an etrex GPS of Garmin make.

Storks, in general, are the large and conspicuous wading birds. These birds are primarily carnivorous thriving mainly on the animal matters with the exception of the Greater Adjutant which also eats carrion. Thus they are secondary consumers (occupying an upper berth) in the wetland ecosystem. They dwell in wetlands, marshes, swamps and are therefore considered to be the best indicator of the health of the wetland. They capture prey while walking slowly in marshes at edges of freshwater lakes, riverbanks, etc. The storks build a large stick nest lined with water weeds and leaves, high in trees (Hancock *et al.* 1992, Perennou *et al.* 1994, Ishtiaq 2001).

An adult Black Stork would stand as high as 90-100 cm; it is usually more shy and wary; seen in pairs, small parties of 10 or 12, or large herds; its food consists chiefly of frogs, fish, crustaceans, insects, and occasionally young or disabled rodents, birds, etc.; prefers riverine areas; breeds in central Europe (Ali & Ripley 1978).

The Black Stork is a strong migrant. It breeds in West and Central Asia, South Russia, Xinjiang and Mongolia. Winter and passage migrant to much of the Indian subcontinent: from northwest to northeast India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. Its core non-breeding (wintering) range in the region is from Gujarat, Delhi area to Assam valley and to south through peninsula in India; Sri Lanka; Central and Northern Bangladesh. It is a passage migrant through most of Afghanistan, Pakistan and Northwest India, while summer visitor to North Afghanistan. However, the Spanish population is resident (Evans 1904, Grimmett *et al*. 1998, Kazmierczak 2000, Thompson and Johnson 2003, Kumar *et al.* 2005, and Rasmussen & Anderton 2005).

From India, there are a number of sight records of this species. It has been reported from Kole Wetlands, Kerala (Jayson 2000); Kerala (Narayankurup 1989 and Prasad 1997); from the banks of Godavari river, Andhra Pradesh (Rao *et al*. 2000), at Rollapadu, Andhra Pradesh (Manakadan 1987); Hyderabad, Andhra Pradesh (Kanniah and Ganesh 1990) Belgaun, Karnataka (Sant 1994); from an area near Pune, Maharashtra (Anon. 1989); Pragsar lake, Gujarat (Himmatsinhjii 1984), Saurashtra, Gujarat (Khacher 1976); Pong Dam Lake (now Ramsar site no. 1211), Himachal Pradesh (Pandey 1989); from Keoladeo National Park, Rajasthan (Sivasubramanian 1992); Deepar Bheel, Assam (Barman and Talukdar 1995); near Dehra Dun, Uttarakhand (Gandhi 1995); Morni Hills and the surrounding Tikkar Tals, Ghaggar River and Berwala Sanctuary district Panchkula, Haryana (Pratap and Om Parkash 2004- internet) to mention a few.

The checklist of birds of Kalesar National Park (Haryana) incorporating 304 species of birds is available on the internet with a foreword by Bill Harvey and updated by Suresh C. Sharma on 6th March 2006. A review of this list revealed that it includes three species of Storks, *viz.*, Painted Stork (*Mycteria leucocephala*), Asian Openbill (*Anastomus oscitans*) and Woolly-necked Stork (*Ciconia episcopus*), but Black Stork (*Ciconia nigra*) does not feature in this list. Therefore, the present sight record of this species is an addition to the avifauna of Kalesar National Park. Besides Black Stork, the Eurasian Wigeon (*Anas penelope*), Northern Pintail (*Anas acuta*), Northern Shoveller (*Anas clypeata*), and Tufted Pochard (*Aythya fuligula*) have also been observed to be added to the avifaunal list of the park.

Black Stork is listed under Schedule IV of the Indian Wildlife (Protection) Act 1972 (BNHS 2002). Its population threshold number is 100 (Kumar *et al*. 2005). Perennou *et al.* (1994) estimated its population between 1,679 – 2,494 breeding pairs (5,037-7,482 individuals) (Wetlands International 2006). It is one of the species to which the '*Agreement on the Conservation of African-Eurasian Migratory Waterbirds*' (AEWA) applies (http://commons.wikimedia.org/wiki/Ciconia_nigra).

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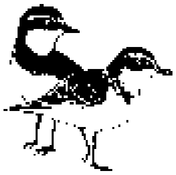

Waders of Sagar Island, Indian Sunderbans delta

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The Sagar Island in the Indian Sundarbans delta is part of the world's largest delta formed by the sediments deposited by three great rivers, the Ganges, Brahmaputra and Meghna, which converge on the Bengal Basin. The Sagar Island situated near the confluence of the river Ganga and the Bay of Bengal in the South 24 Paraganas district; West Bengal is full of several creeks, channels and river system affected by tides. The island is c. 150 km south of Kolkata (Calcutta).

The Sagar Island is surrounded by several rivers, Bedford Island in the north, Bay of Bengal to the south and in the west by Lower and Upper Long Sand Islands and in the eastern fringe bounded by the natural world heritage site Sunderbans Biosphere Reserve.

The island is a human habitat island comprises of 46 villages spread over 504 sq. km of area. At least thirty-seven canals cross this island, which is subdivided, into four large and small islands (Ascoli 1921, De 1994, Malley 1914). Situated at the point where the holy river Ganga once mingled its water with sea, it is regarded as a sacred place of Hindu Pilgrimage. The holiest river of India Ganga is worshipped here and to honor her every year in the middle of the month of January, when the sun enters Capricorn as per the *Bengali* calendar the last day of month of *Poush* and the first day of *Magh* is celebrated as the largest Hindu festival known as *Makar Sankranti*, which attracts national and international pilgrims from all over the world.

Avifaunal data of Sagar Island is lacking. The islands, inlands waterbodies, small riversides, channels, creeks, canals, mudflats and shorelines are excellent habitat for waterbirds mainly shorebirds. Globally threatened Spoon-billed Sandpiper *Calidris pygmeus* reported from this island (Sharma 2003). There are very few published accounts or references of birds from this island.(Sharma 2003, 2006) and (Zöckler *et al* 2005). In an attempt to know island's avifaunal wealth, mainly waterbirds and particularly in search of Spoon-billed Sandpiper, I made an ornithological survey in the Sagar Island between the periods of 7 to 13 January 2007.

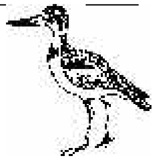
Major bird's habitat identified in the Sagar Island is the mud flats/salt marshes, sandy beaches/dunes and mangroves. The foreshore sediments are characterized by silty, slightly sandy mud, slightly silty sand and silty sand. The inland from high waterline are silty slightly sandy mud, and clayey slightly sandy mud and has been subjected to erosion by natural processes and to a little extent by anthropogenic activities over a long period. The reclamation of Sagar Island from the Sundarbans mangrove wetlands and destruction of bird's habitat for settlements and agricultural purposes in the western Ganga Brahmaputra delta was initiated in 1811 (Pargiter 1934, Hunter 1876). The major natural environmental hazards that affect the island are tropical cyclones, coastal erosion, tidal ingression and dunal encroachment.

I stayed in my field station in a makeshift hut specially designed for the pilgrims. I stayed close to the pilgrims center *Kapilmuni's Ashram*. The study sites were in the neighborhood of *Kapilmuni's Ashram* and *Lighthouse* close to the shoreline of Bay of Bengal. As compared to the area of the island, the area surveyed was very less. The total shoreline, creeks, mudflats, beach line, canals and channels covered were c. 32 km and inland area c. 14 sq km. Surveys were done every day for seven consecutive days between 7th and 13th January 2007. Birds were observed between 07h00 to 17h00 everyday. It took some time to reach the study area by walk. Between 7th and 9th January surveys were done along the shorelines, mudflats, channels, creeks and riversides from a benchmark point at *Kapilmuni's Ashram.* On 10th and 11th January, I moved to the inlands and surveyed waterbodies, agricultural fields, planted forested areas and fishing centers of the island. Again on 12th and 13th January I surveyed the other side of the shoreline. Birds

List of Waders recorded from the Shoreline of Sagar Island, Indian Sunderbans delta from 7 to 13 Jan 2007.

Sl.	Common Name	*Scientific Name*	St	No
01.	Solitary Snipe	*Gallinago solitaria*	UC	13
02.	Pintail Snipe	*Gallinago stenura*	C	25
03.	Common Snipe	*Gallinago gallinago*	C	32
04.	Black-tailed Godwit	*Limosa limosa*	R	05
05.	Bar-tailed Godwit	*Limosa lapponica*	R	04
06.	Whimbrel	*Numenius phaeopus*	VC	92
07.	Eurasian Curlew	*Numenius arquata*	C	64
08.	Spotted Redshank	*Tringa erythropus*	R	02
09.	Common Redshank	*Tringa tetanus*	VC	91
10.	Marsh Sandpiper	*Tringa stagnatilis*	R	02
11.	Common Greenshank	*Tringa nebularia*	UC	10
12.	Green Sandpiper	*Tringa ochropus*	R	01
13.	Wood Sandpiper	*Tringa glareola*	R	02
14.	Terek Sandpiper	*Xenus cinereus*	C	22
15.	Common Sandpiper	*Actitis hypoleucos*	C	65
16.	Ruddy Turnstone	*Arenaria interpres*	R	03
17.	Great Knot	*Calidris tenuirostris*	R	02
18.	Little Stint	*Calidris minuta*	VC	454
19.	Red-necked Stint	*Calidris ruficollis*	VC	05
20.	Temminck's Stint	*Calidris temminckii*	UC	12
21.	Curlew Sandpiper	*Calidris ferruginea*	C	61
22.	Pheasant-tailed Jacana	*Hydrophasianus chirurgus*	UC	09
23.	Bronze-winged Jacana	*Metopidius indicus*	UC	07
24.	Eurasian Thick- knee	*Burhinus oedicnemus*	R	02
25.	Great Thick-knee	*Esacus recurvirostris*	R	03
26.	Black-winged Stilt	*Himantopus himantopus*	UC	09
27.	Pied Avocet	*Recurvirostra avosetta*	R	03
28.	European Golden Plover	*Pluvialis apricaria*	R	05
29.	Pacific Golden Plover	*Pluvialis fulva*	UC	24
30.	Grey Plover	*Pluvialis squatarola*	R	03
31.	Common Ringed Plover	*Charadrius hiaticula*	UC	05
32.	Little Ringed Plover	*Charadrius dubius*	UC	07
33.	Kentish Plover	*Charadrius alexandrinus*	C	19
34.	Lesser Sand Plover	*Charadrius mongolus*	VC	74
35.	Greater Sand Plover	*Charadrius leschenaultii*	UC	14
36.	Yellow-wattled Lapwing	*Vanellus malabaricus*	UC	07
37.	River Lapwing	*Vanellus duvaucelii*	UC	13
38.	Grey-headed Lapwing	*Vanellus cinereus*	C	31
39.	Red-wattled Lapwing	*Vanellus indicus*	UC	11
40.	Small Pratincole	*Glareola lacteal*	R	05

Abrevations: St = Status, C = Common, VC = Very Common, UC = Uncommon, R = Rare



were observed from a distance through telescope & binoculars without disturbing their normal activities. Each day an average of 320 minutes of birdwatching was done with total birdwatching of 2,260 minutes. To avoid double count each area was surveyed only once. Database of common birds were also kept in record for documentation of the avifaunal wealth of the island.

This short ornithological survey recorded total 228 species of birds from the small area of this island with a total individual number is 3081. Apart from this the shorelines of this island is an excellent habitat for waders. All together 1218 individuals belonging to 40 species of waders were recorded. The highest number of individuals recorded was Little Stint (454) and fortunately one individual of Green Sandpiper was recorded. It was found that the Sagar Island is an ornithologically important site. Regular ornithological surveys are required in other parts of the island to learn more about the avifaunal resources of this unique island. It was found that the island is also an important wintering site for Siberian waders and local waterfowl. Apart from this the bird's habitats are very frequently disturbed by over-fishing, prawn seed collection and by the pilgrims, who over-crowd the island particularly during the winter season, when the migratory birds are visiting the area. Although the island is human habited and prone to natural calamities like flood and riverbank erosion, it should be protected and developed as a waders watching site of West Bengal.

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An Annotated Checklist of Waterfowl of the Didwana Inland Saline Lake, Nagaur, Rajasthan, India

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Introduction

Didwana Lake (27^{0}13'N and 74^0 11'E) is a big Salt Lake about 3 km to the South-West of Didwana Town in Nagaur District of Rajasthan, having an area of 777 hectares (1920 acres). Salt is manufactured at Didwana. Sodium Sulphate is produced from the Didwana Salt Lake.

The period from June to September is the rainy season, July and August being the rainfall months. Temperature increases rapidly from March, May and June being the hottest months, with mean daily maximum temperature exceeding 40^{0}C.

In the complex bio-pyramid, supported by the wetland, the waterfowl fauna holds an important place. Waterfowl as a whole depend on the wetlands for food, foraging, shelter, resting, roosting and perhaps as a landmark by the migrating birds.

Waterfowl are of great importance for their aesthetic and economic values. Didwana Salt Lake supports a large population of Waterfowl especially waders during winter. Not many detailed, long-term studies seem to have been undertaken on waterfowl of Didwana. Salt Lake, Nagaur, Rajasthan, India. However, Whistler (1938) published the Ornithological Survey of Jodhpur State, which includes some information of waterfowl of Didwana Lake and is by no means exhaustive. The Didwana Lake was a part of the erstwhile Jodhpur State before the formation of the State of Rajasthan.

The present study was undertaken from April 2002 to March, 2006, with the following objectives:

1.To assess the status, species abundance, composition and seasonality of waterfowls.

2.To fill up the lacuna in the knowledge on the waterfowl distribution and status in the Didwana Inland Salt Lake Saline Ecosystem.

An annotated checklist of Didwana waterfowl was prepared from the data collected. This baseline information will be of help to anybody interested in planning, monitoring or undertaking management studies in future.

The Standardised Common and Scientific Names and Binomial Nomenclature of the Indian Subcontinent by Manakadan and Pittie (2001) have been followed in the Annotated checklist.

Methodology

Field observations were made using Binoculars (7 x 35 and 20 x 50) and a Telescope (D = 80 mm). F = 900 mm Startracker Refractor) in natural condition. The natural population was assessed by directly counting the waterfowl in all transects by foot, in the saline aquatic area habitat. Waterfowl density was estimated by Line Transect Method (Emlen, 1971) Direct observations of waterfowl in nature, "Repeated Standard Field Observations," described by Hartley (1948 and 1953) were followed.

Results

The results are summed up in Table 1.

Residential Status – Out of 61 Didwana Waterfowl 28 are migrants and 33 residents.

Population Status – Population status of both resident and winter migrants waterfowl *species* are regularly monitored at all levels. Didwana Waterfowl are categorised as very common – V. com (8 *species*), Common-com (32 *species)* Uncommon-Uncom (8 *species*), and Rare – Ra (2 *species*).

Acknowledgement

We thank Dr. S. Kaul, Director, Wetland Division, Government of India, Ministry of Environment and Forests, New Delhi for encouragement and assistance.

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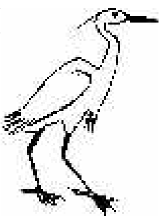
TABLE 1. An Annotated Checklist of Waterfowl of the Didwana Salt Lake Saline Ecosystem.

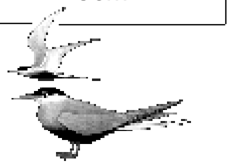
S.No. 1	Common Name 2	Scientific Name 3	Status 4	Abundance (2003) 5
I	**Grebe**	**Podicipedidae**		
1.	Little Grebe	*Tachybaptus ruficollis* (Pallas)	R	V.Com.
II	**Pelican**	**Pelecanidae**		
2.	Spot-billed Pelican	*Pelecanus philippensis* (Gmelin)	WM	Com.(Vulnerable)
III	**Cormorants and Shag**	**Phalacrocoracidae**		
3.	Little Cormorant	*Phalacrocorax niger* (Vieillot)	R	Com.
4.	Great Cormorant	*Phalacrocorax carbo* (Linnaeus)	WM	Com.
5.	Indian Shag	*Phalacrocorax fuscicollis* (Stephens)	R	Com.
IV	**Darter**	**Anhingidae**		
6.	Darter	*Anhinga melanogaster* (Pennant	R	Com.
V	**Herons and Egrets**	**Ardeidae**		
7.	Little Egret	*Egretta garzetta* (Linnaeus)	R	Com.
8.	Large Egret	*Casmerodius albus* (Linnaeus)	R	Com.
9.	Cattle Egret	*Bubulcus ibis* (Linnaeus)	R	V.Com
10.	Indian Pond Heron	*Ardeola grayii* (Sykes)	R	Com.
11.	Black-Crowned Night Heron	*Nycticorax nycticorax* (Linnaeus)	R	Com.
12.	Grey Heron	*Ardea cinerea* (Linnaeus)	R	Com.
13.	Purple Heron	*Ardea purpurea* (Linnaeus)	R	UnCom.
VI	**Storks**	**Ciconiidae**		
14.	Painted Stork	*Mycteria leucocephala* (Pennant)	R	Com.
15.	Black Stork	*Ciconia nigra* (Linnaeus)	R	Com.
16.	European White Stork	*Ciconia ciconia* (Linnaeus)	WM	Com.
17.	Asian Openbill Stork	*Anastomus oscitans* (Boddaert)	R	Com.
18.	Black-necked Stork	*Ephippiorhynchus asiaticus* (Latham)	R	Ra(Vulnerable)
19.	Greater Adjutant Stork	*Leptoptilos dubius* (Gmelin)	R	Ra(Endangered)
VII	**Ibises and Spoonbills**	**Threskiornithidae**		
20.	Glossy Ibis	*Plegadis falcinellus* (Linnaeus)	R	UnCom.
21.	Oriental White Ibis	*Threskiornis melanocephalus* (Latham)	R	UnCom.
22.	Black Ibis	*Pseudibis papillosa* (Temminck)	R	Com.
23.	Eurasian Spoonbill	Platalea leucorodia (Linnaeus)	R	Com.
VIII	**Flamingo**	**Phoenicopteridae**		
24.	Greater Flamingo	*Phoenicopterus ruber* (Linnaeus)	R	Com.
IX	**Geese and Ducks**	**Anatidae**		
25.	Leser Whistling Duck	*Dendrocygna javanica* (Horsfield)	R	Com.
26.	Spot-billed Duck	*Anas poecilorhyncha* (Forster)	R	V.Com.
27.	Northern Shoveller	*Anas clypeata* (Linnaeus)	WM	V.Com.
28.	Northern Pintail	*Anas acuta* (Linnaeus)	WM	V.Com.
29.	Common Teal	*Anas crecca* (Linnaeus)	WM	V.Com.
30.	Comb Duck	*Sarkidiornis melanotos* (Pennant)	WM	V.Com.

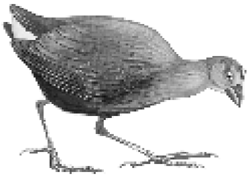


1	2	3	4	5
31.	Garganey	*Anas querquedula* (Linnaeus)	R	UnCom.
32.	Mallard	*Anas platyrhynchos* (Linnaeus)	WM	UnCom.
33.	Red-crested Pochard	*Rhodonessa rufina* (Pallas)	WM	UnCom.
34.	Common Pochard	*Aythya ferina* (Linnaeus)	WM	Com.
35.	Tufted Pochard	*Aythya fuligula* (Linnaeu	WM	Com.
X	**Cranes**	**Gruidae**		
36.	Common Crane	*Grus grus* (Linnaeus)	WM	Com.
37.	Sarus Crane	*Grus antigone* (Linnaeu	R	Com.(Vulnerable)
38.	Demoiselle Crane	*Grus virgo* (Linnaeus)	WM	Com.
XI	**Moorhens and Coots**	**Rallidae**		
39.	Common Moorhen	*Gallinula chloropus* (Linnaeus)	WM	Com.
40.	Purple Moorhen	*Porphyrio porphyrio* (Linnaeus)	R	V.Com.
41.	Common Coot	*Fulica atra* (Linnaeus)	WM	V.Com.
XII	**Plovers and Lapwings**	**Charadriidae**		
42.	Little Ringed Plover	*Charadrius dubius* (Scopoli)	WM	V.Com.
43.	Kentish Plover	*Charadrius alexandrinus* (Linnaeus)	WM	Com.
44.	Red Wattled Lapwing	Vanellus indicus (Boddaert)	R	V.Com.
XIII	**Sandpipers, Stints, Snipes, Godwits and Curlews**		**Scolopacidae**	
45.	Common Sandpiper	*Actitis hypoleucos* (Linnaeus)	WM	Com.
46.	Marsh Sandpiper	*Tringa stagnatilis* (Bechstein)	WM	Com.
47.	Wood Sandpiper	*Tringa glareola* (Linnaeus)	WM	Com.
48.	Common Redshank	*Tringa totanus* (Linnaeus)	WM	Com.
49.	Spotted Redshank	*Tringa erythropus* (Pallas)	WM	Com.
50.	Black-tailed Godwit	*Limosa limosa* (Linnaeus)	WM	Com.
51.	Eurasian Curlew	*Numenius arquata* (Linnaeus)	WM	Com.
52.	Black-winged Stilt	*Himantopus himantopus* (Linnaeus)	R	V.Com.
XIV	**Avocets**	**Recurvirostridae**		
53.	Pied Avocet	*Recurvirostra avosetta* (Linnaeus)	WM	Com.
	Stone Plover	*Burhinidae*		
54.	Great Stone Plover	*Esacus recurvirostris* (Cuvier)	R	UnCom.
55.	Beach Stone-Plover	*Esacus magnirostris* (Vieillot)	R	UnCom.
XV	**Gulls and Terns**	**Laridae**		
56.	Brown Headed Gull	*Larus brunnicephalus* (Jerdon)	WM	Com.
57.	Black-Headed Gull	*Larus ridibundus* (Linnaeus)	WM	Com.
58.	White-Winged Black Tern	*Chlidonias leucopterus* (Temminck)	WM	UnCom.
59.	River Tern	*Sterna aurantia* (Gray)	R	Com.
60.	Black-Bellied Tern	*Sterna acuticauda* (Gray)	R	Com.
61.	Whiskered Tern	*Chlidonias hybridus* (Pallas)	R	Com.

The following abbreviations are used :-

Com = Common, R = Resident, Ra = Rare, Uncom.= Uncommon, V.Com = Very Common, WM = Winter Migrant





Additions to the avifauna associated with waterbodies in Kodagu District, Karnataka

M.M.Balakrishnan, Chettalli, Kodagu-571248. email mm_balan@yahoo.co.in

The birds of Kodagu district, Karnataka have been recently documented by Narasimhan (2004). The following birds not cited in this book were recorded during visits to some of the water bodies in the district.

The purple moorhen was not spotted in Thaverekkere during visits on 19th August 2006 and 4th November 2007. In Nalloor pond, this bird was not seen during the visit on 15th April 2007, 29th April 2007, 22nd July 2007 and 31st January 2008. This bird could probably be an occasional migrant from the resident population in the water bodies in the nearby Periyapatna Taluk (Mysore District), whereas others could be residents.

Mr. H K. Dineshkumar, LIC Consultant, Kushalnagar enthusiastically took me to the waterbodies in and around Kushalnagar. Mr.C.P.Chengappa, Senior Manager, Nalloor Estate, Tata Coffee Ltd. and Mr. Jose Kurian, Proprietor, Maldare Estate permitted me to freely move around the ponds in their coffee plantations. I express my gratitude to them.

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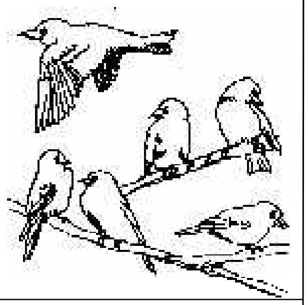
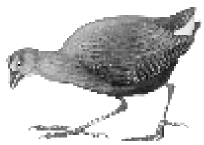
Sl. No	Species	Location	Date	Abundance
1	Streaked Weaver *Ploceus manyar*	a) Rontekkere, Gondibasavanahalli Village, Kushalnagar, b) a small waterhole near Balamury Ganapathy Temple near Kusalnagar town and c) Thavarekkere near Kushalnagar on Mangalore Road.	19thAugust 2006 and 4th November 2007.	Many nesting pairs 
2	Common Moorhen *Gallinula chloropus* 	a) Samadhikkere	19th August 2006	1
		b) Pond on of Nalloor Estate	11th February 2007	30
			1st April 2007	50
			15th April 2007	20
			22nd July 2007	6
			31st January 2008	26
		c) Pond on Maldare Estate	3rd November 2007.	1
3	Purple Moorhen *Porphyrio porphyrio* 	a) Thaverekkere	2nd December 2006	2
			25th February 2007	1
		b) Nalloor pond	17th March 2007 and 1st April 2007	1

Group clashes, number game and forced mating in Jungle Babblers (*Turdoides striatus*)

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In this article we have tried to describe some of our observations about the behaviour of Jungle Babblers (*Turdoides striatus)* and their behaviour in relation to other bird species. These observations are a compilation taken over a period of time and hence the observation dates are also mentioned. Andrews and Naik (1965, 1970) have done a great work on the behaviour of the species. Acharya (1951) has reported pecking by the species at their own reflections.

The intra-specific group clashes and the number game:

On 4th June 2007, one of us (Raju) was observing Jungle Babblers at Maharajbagh garden in Nagpur city. It seemed like there were two groups of Babblers, one group comprised 16 birds (according to facial orientation) at the time of fight. At once there was a group clash between the two groups. The individuals seemed to be pouncing and attacking each other. There was lot of commotion and calling and the attacking babblers were keeping their bills wide-open. The entire body feathers were fluffed up; wings were kept open with constant quivering or flicking and tails dangled and fanned continuously (presumably flaunting themselves to look stronger and bigger than their rivals). Many were seen jumping up and clashing in the air. However, within seconds, members of one group began retreating with toned down aggression calls and yet threatening with open gape and open wings. The said group withdrew hopping still and maintaining the tempo as if they are not defeated. The attack or even fleeing involved only hopping and never involved resorting to strong flight. We did not observe any serious injuries after the fight. Unfortunately in this group clash, we were not able to count the members in the second group, as they got mixed up in the clash.

On 25th June 2007 again one of us observed (Raju) a group clash of Jungle Babblers at the same place. There was a lot of ruckus, there were two groups of three and six babblers approaching each other with aggressive postures as described above. But the three started retreating before the six could actually attack them. Six more babblers arrived to support the three retreating babblers, and the nine member strong babbler group started hopping towards the group of six. Now the group of six which was looking stronger a few moments earlier, started somewhat retreating with open gapes, frantic calls and eventually the two groups clashed. The individuals pounced on one another, clasped each other's feet, sparred at each other in mid-air (1-2 feet above ground), fell down holding each other's feet or claws firmly and wildly pecked at each other. It was noticed that in these incidents of clashes between the Babbler groups, the group with lesser numbers usually retreated.

Inter-specific clashes with Brahminy Myna (Starling) and the number game:

On 26th June 2008, Raju was observing birds near a tea kiosk and some Jungle Babblers and Brahminy Mynas (*Sturnus pagodarum*) were foraging nearby. At 0826 hours he saw a Brahminy Myna and a Jungle Babbler fighting. They jumped into air and dashed against each other. Within moments another Brahminy Myna jumped into the fray and started pecking at the solitary Babbler. Immediately the Babbler retreated and flew away. After two minutes or so, the Babbler and the Myna resumed their fighting. They rolled over holding each other's feet or claws and pecking at each other. But, this time another Babbler joined the fight. The first Babbler was firmly holding down the Myna, the second Babbler pecked the Myna madly all over its body. The hapless Myna somehow managed to free itself and flew away. In these two instances both Myna and Babbler seemed to be proving that that the power of two is more than one!

Black-hooded Oriole (*Oriolus xanthornus*) and Jungle Babbler's nest:

On 25th May 2007 Raju located a nest of Jungle Babblers on a small tree in Maharajbagh Garden, which was being constructed. In 15 minutes at least three Babblers did a total of 9 sorties to the nest with nesting materials. The three Babblers sat in the nest by rotation. Raju saw a Black-hooded Oriole (*Oriolus xanthornus*) lingering around the nesting tree. The Babblers chased it away. But at 0842 hours the Oriole approached and inspected the nest when the Babblers were not around! Again on 29th May 2007, a Black-hooded Oriole arrived near the nest of the Jungle Babblers. It called few times its regular calls, then called *"squak…squak" "squak…squak"* a couple of times, inspected the nest and flew away. I still wonder at the inquisitive nature of the Black-hooded Oriole.

After some time at 0917 hours the Babblers attacked an approaching House Crow (*Corvus splendens)* and tried to peck on its face.

Forced Mating:

On 28th May 2007 Anil was observing a group of Jungle Babblers below the nesting tree in Maharajbagh Garden. He noted that four or five babblers were chasing a particular babbler, which in turn was hopping in circles and running around the small tree trunk. But soon the fleeing babbler was pounced upon and forced to squat on the ground by the chasing babblers. At that moment one of the babblers mounted on the back of the defenseless babbler and forcibly mated with it! On searching the literature we found that gang rape is reported in birds (Bagemihl, 1999). This also could be described as forced mating.

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CORRESPONDENCE

UNUSUAL MOUNTINGS ON A CATTLE EGRET (Bubulcus ibis) IN A HERONRY,

by RAJU KASAMBE, G - 1, Laxmi Apartment, 64, Vidya Vihar Colony, Pratap Nagar, Nagpur-440022, e-mail: kasambe.raju@gmail.com

On 11th June 2008 I visited a Cattle Egret (*Bubulcus ibis*) heronry in the middle of Kandri village near Kanhan town in Nagpur district. I have been visiting this heronry since 2006 (Kasambe & Pimplapure, 2007). I counted around 40 nests here on the day on a single Tamarind (*Tamarindus indica*) tree over a busy road connecting the nearby coal mine. I counted around 135 to 140 egrets on the tree. Most of the egrets were attired in their typical breeding plumage. The egrets were seen bringing nesting materials to the nests. I did not find any eggshells or broken eggs below the tree, suggesting that probably the eggs were yet to be laid.

It was at around 2.00 pm when I visited the heronry and it started raining but I decided to continue my observations. I also counted at least four birds donning non-breeding plumage. I noticed that whenever one egret left the nest the second took the charge.

On a particular nest one female egret was seen squatting, when a male egret arrived and mounted over the female but lost its balance, flapped its wings awkwardly and managed to perch on a nearby branch. Within moments a second male egret arrived and mounted on the same female at nest; but this male also lost its balance and perched on another branch in close proximity to the first male egret. At once the two males started fighting with raised plumes on their crests, and while they were fighting, a third male egret arrived, mounted on the squatting female egret for around 40 seconds and consummated.

The nests are approximately 30 feet above the ground and hence there was little chance of me faltering in my observations. The third egret, which successfully mated, flew away after the act, whereas the first two males kept fighting for sometime. During this incident the squatting female egret seemed to remain still and did not offer resistance, as the three egrets attempted to mate in quick succession.

Incidentally, on 27th August 2005, when I was observing egrets in a heronry near the Pili River on the outskirts of Nagpur, along with Dr. Tarique Sani and Ms. Swati Sani, I had noticed yet another strange behaviour of nesting egrets (Kasambe & Pimplapure, 2007). I spotted an egret arriving to feed its chicks by regurgitating, but the hungry chick clasped the beak of the adult which tried in vain to get its beak freed from the chick (Web references 1, 2 &3). In the process the adult lost its balance and managed to perch on a branch with another nest. But the chick which was standing in that nest grabbed the bill of this particular egret that had approached the wrong nest and did not release its beak until it forced the adult egret to regurgitate the food! Thus this chick forcibly snatched (?) the food, from an adult egret which was not its parent! Unfortunately we couldn't take the video footage of this incident.

I do not know what the first phenomenon should be called. I wonder whether different males sire the chicks in a single nest in Cattle Egret heronries. Aren't there fixed pairs in the heronry? Is it possible for any male to mate with any female with no holds barred in Cattle Egrets? Further studies are required to understand the complex behaviour of one of our commonest species in India.

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OCCURRENCE OF BROWN ROCK CHAT (*Cercomela fusca*) IN CENTRAL CHHATTISGARH,

by A.M.K.BHAROS and AKHILESH BHAROS. B-101, Gayatrinagar, PO; Shankernagar, RAIPUR. CG, 492007.

The distribution range of the Brown Rock Chat (*Cercomela fusca*) has been described as endemic to subcontinent & resident, but the map on page 667, does not include Chhattisgarh. (*Grimmett & Inskipps 1998*) endemic species, resident, common but capriciously distributed and with some seasonal local movements. Madhya Pradesh to Narbada. Affects boulders, scarps in rocky hills, ravines, quarries, ruins, old buildings, wall and bungalows in towns and suburbs. (*Ali & Ripley 1987*);

The species has been recorded by me at following places;

1. Sidhi (22^0 47‘ 24^0 2‘ N , $81^0$18‘, - 82^0 48‘ E), also adjacent Rewa ,distt, MP . Fairly common in hilly tracts and in Sidhi and Rewa distts and adjacent areas. Movements seasonal, more common in May to October. Occasionally scattered birds upto 30-35 in numbers in hilly tracts otherwise singly or in two or three. In other months lesser in numbers. One particular bird with right leg missing below knee, seen regularly and considered as one sighting, it had adopted the mode to obtain winged insects including butterflies and moths, mostly in air by performing aerial sallies. The species was studied well during about 30 months stay here.

2. Ujjain ($23^0$10‘-23^0 17‘ N, $77^0$13‘ - 77^0 21‘ E), Madhya Pradesh.

Seen at various locations in township, one bird was regularly sighted in my office building at Freegunj.

3. Jabalpur, (21^0 N 80^0 E) , Madhya Pradesh.

Solitary bird sighted in March 2003 in Jabalpur city .

4. Rajnandgaon (21^0 10‘ N, 81^0 03‘ E), Chhattisgarh.

A solitary bird sighted in November 2000.

5. Raipur, ($21^0$14‘ $21^0$23‘N, $81^0$36‘ -$81^0$63‘ E), Chhattisharh.

Species has been irregularly sighted over the past more than five years, monthwise sighting records for the last three years are as given in Table I. Birds singly or in small flocks up to 4 have been seen from November to March and comparatively in lesser numbers in other months in Raipur city and adjacent areas (quarries).

Table- 1

SIGHTING RECORDS OF BROWN ROCK CHATS IN RAIPUR DISTT.

SN	YEAR	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	**2004**													
	No of sightings	-	-	2	4	-	3	1	3	2	5	6	4	30
	No of birds	-	-	3	8	-	3	1	3	2	5	5	4	34
2.	**2005**													
	No of sightings	8	11	10	4	-	-	-	-	-	-	2	6	41
	No of birds	10	20	13	5	No observations done						3	6	47
3.	**2006**													
	No of sightings	12	9	7	-	1	1	5	1	-	4	2	1	43
	No of birds	15	10	7	-	1	2	6	1	-	5	2	1	50

Table -2

Comparative percentage of sightings

Distt & month Blocks	**Year**	**1992-93**	**1993-94**	**2004-5**	**2005-6**	**2006-7**
Sidhi						
April to Oct		33	13	-	-	-
Nov to Mar		67	87	-	-	-
Raipur						
April to Oct		-	-	88	09	20
Nov to Mar		-	-	12	91	80

Comparison

The comparison has been made for the blocks of months April to October & November to March, After March the migratory species mostly depart. This comparison indicates sighting of more birds in block November to March in Sidhi and Raipur distt both. Table - 2.

Possibility

This suggests local migrations at both the places and possibly the distant southwards migration also from defined northern range in winter months.

Conclusion

Sidhi is situated within but Jabalpur and Ujjain are on the periphery of the defined distribution range. Raipur & Rajnandgaon are located about 450 kms south of Sidhi, 350kms South East of Jabalpur and 650 kms East of Ujjain as the Co ordinates suggest.

Thus almost regular sighting of the species in all the months for past three years at Raipur, even when the winter migratory species including the

Blue Rock Chats, have returned back, suggests, its occurrence in this area as well, which is well beyond the known distribution range, though in lesser numbers as compared to north. It also leads to conclusion that an isolated population may be in existence in central Chhattisgarh which gets augmented from November to March.

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A MONTH-LONG SURVEY OF ARRUPATHI WETLAND, NAGAPATTINAM DISTRICT, TRANQUBAR TALUK, TAMILNADU.

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Several small wetlands in rural pockets of Tamilnadu are yet to be studied. Wetland has its own importance. Amezang (2002) emphasized that in the past, the wetlands were regarded as unhealthy land. Wetland destruction by human intervention commenced long ago and has accelerated in recent times. As a consequence, wetlands are among the most degraded of all ecosystems.

According to the Ramsar Convention of the IUCN at Iran in 1971, wetlands are defined as "submerged or water saturated lands, both natural and man made, permanent or temporary, with water that is static or flowing, fresh or brackish or salt including areas of marine water, the depth of which at low tides does not exceed 6 meters". In a broad sense, "all submerged or water saturated lands, natural or man made. Inland or coastal, permanent or temporary, static or dynamic, vegetated or non–vegetated, which necessarily have land water interference" can be referred to as wetlands.

Wetlands help mankind in a variety of ways such as agriculture, fishing, sewage disposal, cultivation of edible water plants, reed gathering, drinking and wallowing by cattle, grazing, fodder collection, fuel wood collection, domestic use, wildlife production, ground water recharge, pollution control, sediment control, landmark, tourism and maintaining higher atmospheric humidity. Apart from the above, it gives asylum to large number of bird species, especially the wading birds. Most of the wetlands are used by the birds as a breeding, feeding and stopover sites. Large number of migratory as well as the resident birds depend the wetland for their survival. In freshwater wetlands we can commonly see the birds like ducks and geese, wading birds like sandpiper, plover's, storks, herons and egrets, and a huge number of small birds like kingfishers, weavers, and warblers.

India's wealth of wetlands includes both natural as well as man-made. Infact, the proportion of the country's man-made wetlands is about 1.8 times higher than its area under natural wetlands. According to the Ministry of Environment and Forest (MOEF, 1995) report, area of man made wetlands was around 25, 89, 266 ha. and that of natural wetlands was 14, 5, 871 ha. Rivers, streams, springs, flood plains, a variety of lakes (including chaurs, jheels, beels, sarovar etc), ponds and marshes are common natural wetlands.

The objective of the present study is

1.To make a check-list of the birds found in the Arrupathi wetland

2.The role of birds in the surrounding ecosystem and

3.To provide general information of this area and birds species for future studies, and make a simple atlas for birds in this area.

Study Area

The present study was carried out in Arrupathi Lake (11° 18` North Latitude and 79° 50` East Longitude), Nagapattinam District, Tranqubar Taluk, Tamilnadu, India. It is situated at a distance of about 8 km east of Mayiladuthurai and 15 km west of Poombuhar. It is situated on the Southern banks of Cauvery River and left side of state highway leading from Mayiladuthurai to Nagapattinam. The lake covers an area of 15 acres.

The lake is in lower area and therefore the runoff rainwater is stagnant for a long time even after the monsoon months. The area is submerged up to 6 months (September – February) every year. After March, the lake area is extensively used for agricultural operations. Farmers cultivate paddy, sugarcane, banana, pulses and other cereals during the remaining months.

Human settlements are found in the southern side of the lake, the northern side is surrounded by agricultural lands and dense vegetation of teak, bamboo, coconut, and neem. This dense vegetation is used by the birds for roosting and nesting. Due to the unique habitat, different ecological groups of birds utilize this area.

Materials and Methods

The study was carried out during March 2008, in Arrupathi Lake, near A.V.C. College. Data was collected everyday at the evening hours except Sundays. After the college hours we went for data collection in the evening hours (14.00 to 17.30 hrs).

The birds were observed either by binoculars (72 ´ 503) or by naked eyes depending on the distance. The birds were counted by walking on the margin of the Lake. All the data were collected only from the bank of the Lake.For identifying birds, the field guides (Ali 2002, and Grimmett et al 1999) were used.

Observation and Results

The Arrupathi wetland is 2 km away from our college; we planned a month long study about the avian diversity of the lake. Data was collected periodically in the evening hours of March 2008. During the survey, a total of 24 species of birds were recorded. They belonged to 12 orders and 18 families (Table). Six different foraging groups of birds were recorded during the study period. The percentage wise foraging type of birds shows that highest percentage was the insectivore (33%), followed by piscivore (29%), omnivore and carnivore (13%), frugivore (8%) and granivore (4%).

Out of the 24 species, 3 were migratory (Golden oriole, Pheasant tailed jacana, and Little cormorant). In the lake, 8 species of flora were identified *(Iopomea aquatica, Alternanthera, Otelia alismodies, Cyperus rotundus, Scirpusspecies, Ludwigia, Pistia, and Nymphoides)*.

Discussion

Madson (2003) emphasized that it is important to find the distribution of bird's species, and sub-species in the Indian subcontinent. Ornithologists and bird lovers in India agree that the knowledge about the present status of common birds in the subcontinent is rather deficient. He also bemoaned that there is a general decline in the number of common birds like vulture, black kite, and species of doves, drongos, roller and parakeets.

In the same way, information of wetlands and the species' dependence on wetlands in our country are yet to be comprehensively analyzed and published. To initiate this kind of work, we have carried out the present study the area.

Three migratory birds seemed to be effectively utilizing the lake. Especially the population of Pheasant tailed jacana was noticeable during the study period (48). Salim Ali has said that, the jacanas prefer vegetable matter including seeds, roots etc., aquatic insects and mollusks. The relatively higher population of jacanas was perhaps due to the presence of 8 plant species in the lake.

The study area acts as a wetland as well as agricultural lands since it is surrounded by agricultural fields and human settlements. According to Salim Ali (1972), birds are the friends of the framers and not their foes, because they control the insects that plague his crops. In the species recorded, 33% were insectivore, a detail study is required regarding the availability of insect prey for them and it will give a picture about the important role of birds in the agro-ecosystem.

Species richness in an area is dependent on the availability of food, climate, and evolutionary history and predation pressure (Jayson, 2000). Here the study area covers 15 acres, and we could record 24 species which indicates that the area fulfils most of the criteria mentioned by Jayson.

Further investigations are required to evaluate the availability of food for the different groups of birds in the study area. Studies relating to the vegetation status and diversity of vegetation also need to be taken up in relation to avian diversity.

Acknowledgement

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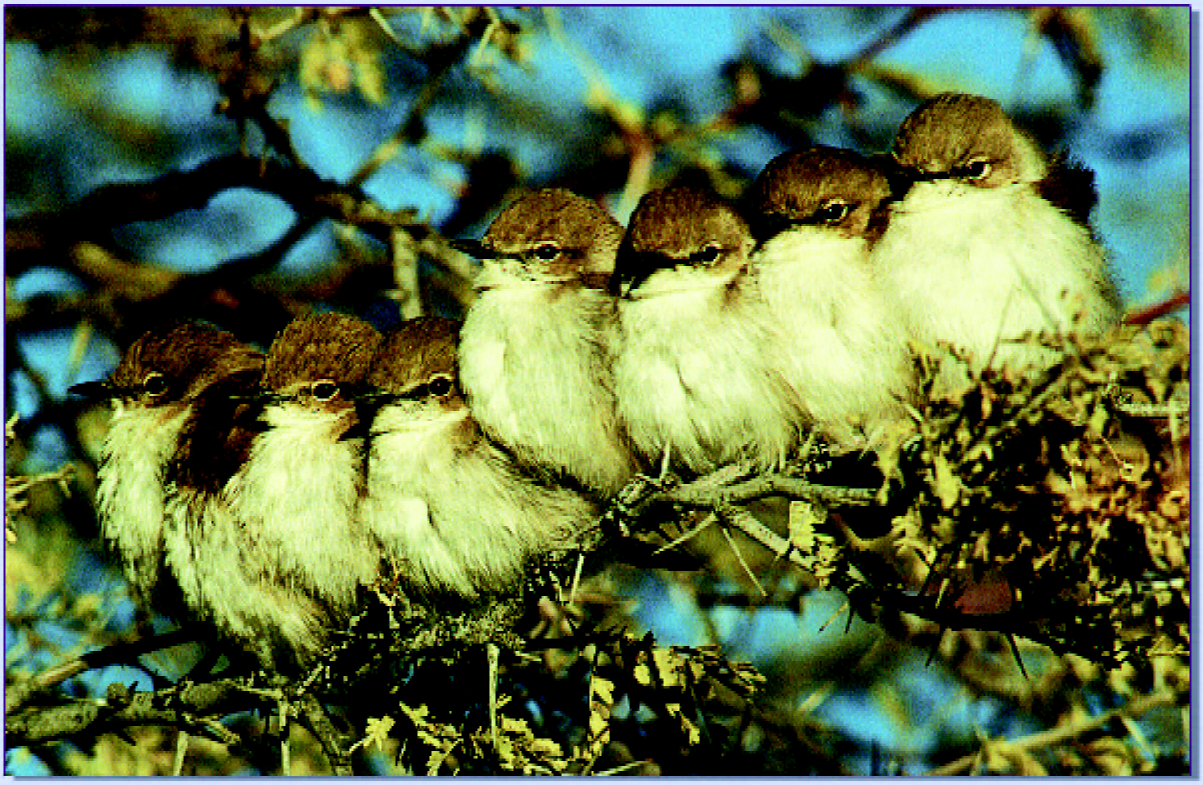
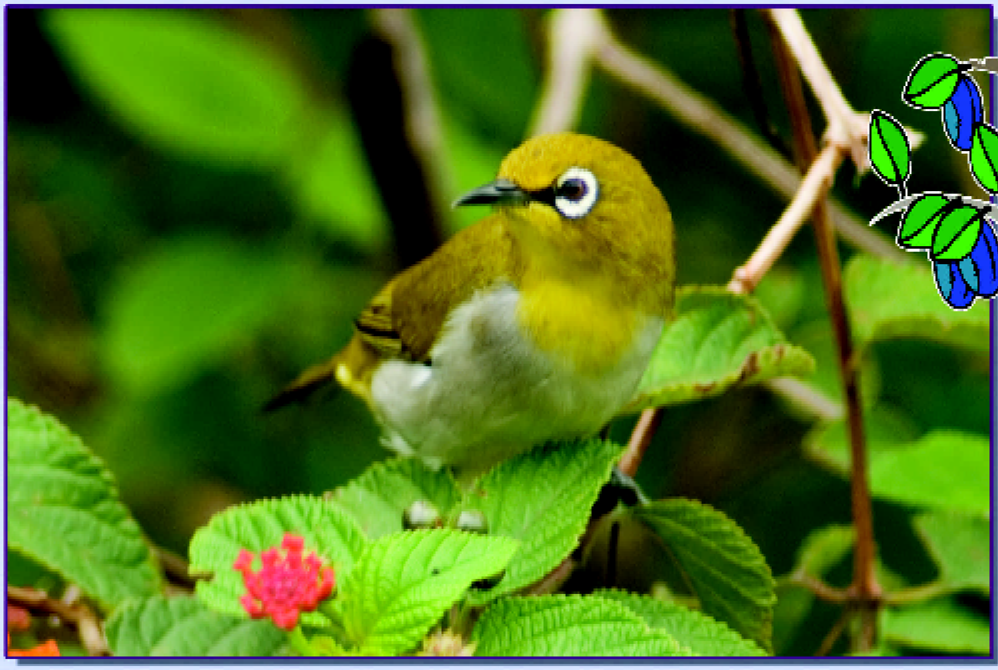
Table. Birds recorded in the Arrupathi Wetland during the study period.

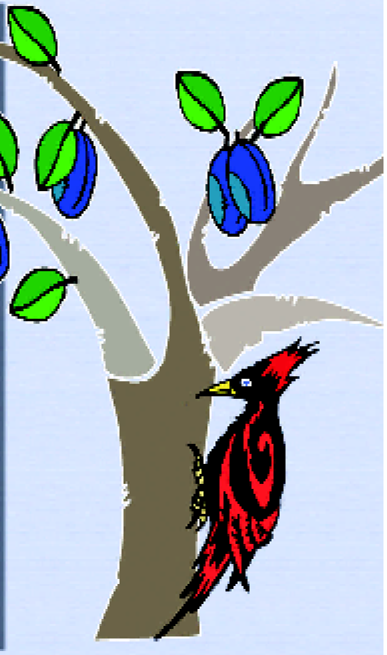
Sl. No	Common Name	Order	Family
1	House Crow	Passeriformes	Corvidae
2	Jungle Crow	Passeriformes	Corvidae
3	Black Drongo	Passeriformes	Dicruridae
4	Indian Tree Pie	Passeriformes	Corvidae
5	Red-vented Bulbul	Passeriformes	Pycnonotidae
6	Golden Orile	Passeriformes	Oriolidae
7	Common Myna	Passeriformes	Sturnidae
8	Spotted Dove	Columbiformes	Columbidae
9	Rose-ringed Parakeet	Psittaciformes	Psittacidae
10	Brahminy Kite	Falconiformes	Accipitridae
11	Black Kite	Falconiformes	Accipitridae
12	Greater Coucal	Cuculiformes	Centropodiae
13	Asian Palm Swift	Apodiformes	Apodidae
14	Golden-backed Woodpecker	Piciformes	Picidae
15	Small Green Bee-eater	Coraciiformes	Meropidae
16	Small Blue Kingfisher	Coraciiformes	Alcedinidae
17	Pied Kingfisher	Coraciiformes	Alcedinidae
18	White-breasted Kingfisher	Coraciiformes	Alcedinidae
19	Little Egret	Ciconiiformes	Ardeidae
20	Pond Heron	Ciconiiformes	Ardeidae
21	Pheasant-tailed Jacana	Charadriformes	Jacanidae
22	Little Cormorant	Pelecaniformes	Phalacrocoracidae
23	Red-wattled Lapwing	Charadriiformes	Charadriidae
24	White-breasted Waterhen	Galliformes	Rallidae

Front Cover: **Great Stone-Plover** *(Esacus recurvirostris),* is a leggy thick headed, massive billed plover. The distinctly upturned-looking black and yellow bill, oversized yellowish "goggle" eyes with white spectacle-marking around them, and two blackish bands are diagnostic. This plover can be seen drowsing in full glare of sun on some baking hot rocky island of a river, or running steadfastly around sandy beds of large rivers and their barren environs, or searching for food near beaches, tidal estuaries and salt pans. The heavy bill is designed to wrench up stones to seize crabs and other aquatic fauna underneath. It also relishes on frogs, lizards and an occasional egg of a Kentish Plover; which is robbed from the latter's nest and swallowed whole. The Great Stone-Plover's calls include a single loud harsh note, a low hiss and the wild intermittent *kree…kree…kree… kre..kre..kre* wailing cries. *Photo :* ***M.R. Rajaram***



Most muscicapids are monogamous and pair territorial, but a more sociable lifestyle is pursued by a few members of the family, including the Mariqua Flycatcher. This species lives in small groups which breed co-operatively and defend communal territories. These groups spend most of the time together, using frequent quiet contact calls to communicate when foraging, and often perching shoulder-to shoulder, especially when roosting. [*Bradornis mariquensis acaciae*, Kalahari Gemsbok National Park, South Africa. Photo: Tim Jackson, Oxford Scientific Films]. *(Courtesy : HBW, Volume 13)*





White Eye (*Zosterops palpebrosus*), about to feed on lantana berries. (Photo : M.R. Rajaram)